

Title (en)
THERMOPLASTIC PREPREG CONTAINING CONTINUOUS AND LONG FIBERS AND METHOD FOR ITS MANUFACTURE

Title (de)
THERMOPLASTISCHES PREPREG MIT ENDLOS FasERN UND LANGEN FasERN

Title (fr)
PRÉIMPRÉGNÉ THERMOPLASTIQUE CONTENANT DES FIBRES LONGUES ET CONTINUES

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Application
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Abstract (en)
[origin: WO2011163365A2] A prepreg that contains a plurality of unidirectionally aligned continuous fibers embedded within a thermoplastic polymer matrix is provided. In addition to continuous fibers, the prepreg also contains a plurality of long fibers that are combined with the continuous fibers so that they are randomly distributed within the thermoplastic matrix. As a result, at least a portion of the long fibers become oriented at an angle (e.g., perpendicular) relative to the direction of the continuous fibers. Through such orientation, the long fibers can substantially increase the mechanical properties of the prepreg in the transverse direction (e.g., strength) and thus achieve a more isotropic material. Although unique isotropic prepreps are one aspect of the present invention, it should be understood that this is not a requirement. In fact, one notable feature of the present invention is the ability to tailor the mechanical properties of the prepreg for an intended application by selectively controlling certain process parameters, such as the type of long fibers employed, the type of continuous fibers employed, the concentration of the long fibers, the concentration of the continuous fibers, the thermoplastic resin(s) employed, etc.

IPC 8 full level
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